AMCA Sand Louvers & Certification

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Lisa Cherney

Education Manager, AMCA International

Webinar Moderator

- Joined AMCA in February 2019
- Responsible for development of AMCA's education programs; staff liaison for the Education & Training Subcommittee
- Projects include webinars, online education modules, presentations at trade shows, AMCA Speakers Network and other duties as assigned.

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- Participation Guidelines:
  - Audience will be muted during the webinar.
  - Questions can be submitted anytime via the GoToWebinar platform and will be addressed at the end of the presentation.
  - Reminder: This webinar is being recorded!
  - To earn PDH credit for today, please stay clicked onto the webinar **for the entire hour**.
  - A post-webinar evaluation will be emailed to everyone one hour after today's broadcast, and it must be completed to qualify for today's PDH credit.

Q & A

To submit questions:

- From the attendee panel on the side of the screen, select the “Questions” drop down option.

- Type your question in the box and click “Send”.

- Questions will be answered at the end of the program.

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ENGINEERING RCEP
REGISTERED CONTINUING EDUCATION PROGRAM

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Ed Rizk

Director, AMCA Board of Directors

Presenter

- Based in Dubai
- Chair of AMCA Sand Louver Committee
- Developed wind driven sand resistance test in ANSI/AMCA Standard 500-L *Laboratory Methods of Testing Louvers for Rating*

Abhishek Chhabra

Market Development Manager,
Thomas Bell-Wright, AMCA Partner Lab

Presenter

- Market Development Manager at AMCA Partner Testing Lab in Dubai
- Over 18 years advocating the need for compliance to standards for improved safety and quality
- Degrees in engineering and finance

AMCA Sand Louvers & Certification

Purpose and Learning Objectives

The purpose of this presentation is to inform Middle East engineers, architects and specifiers about sand louvers and their design, testing and certification.

At the end of this presentation, you will be able to:

- Explain what a sand louver is and its significance for Middle East building design.
- Describe the sand louver testing standards employed.
- Outline the criteria of the AMCA Sand Louver Test Standard.

Agenda

- Sand Louver Form and Function
- Existing Testing Standards
- New AMCA Sand Louver Test Standard
- Local Testing Facility

Discussion to Include:

- What is a Sand louver ?
- What are the Existing testing standards ?
- New AMCA Sand louver Test Standard
- Where can you test your sand louver?

Sand Louver Form and Function

- Architectural (STATIC) ventilation device integrated in the building envelope
- Pre-filtration Media for airborne sand
- Minimum Sand particle size 76um
- Self cleaning / No entrapment

Existing Testing Standards

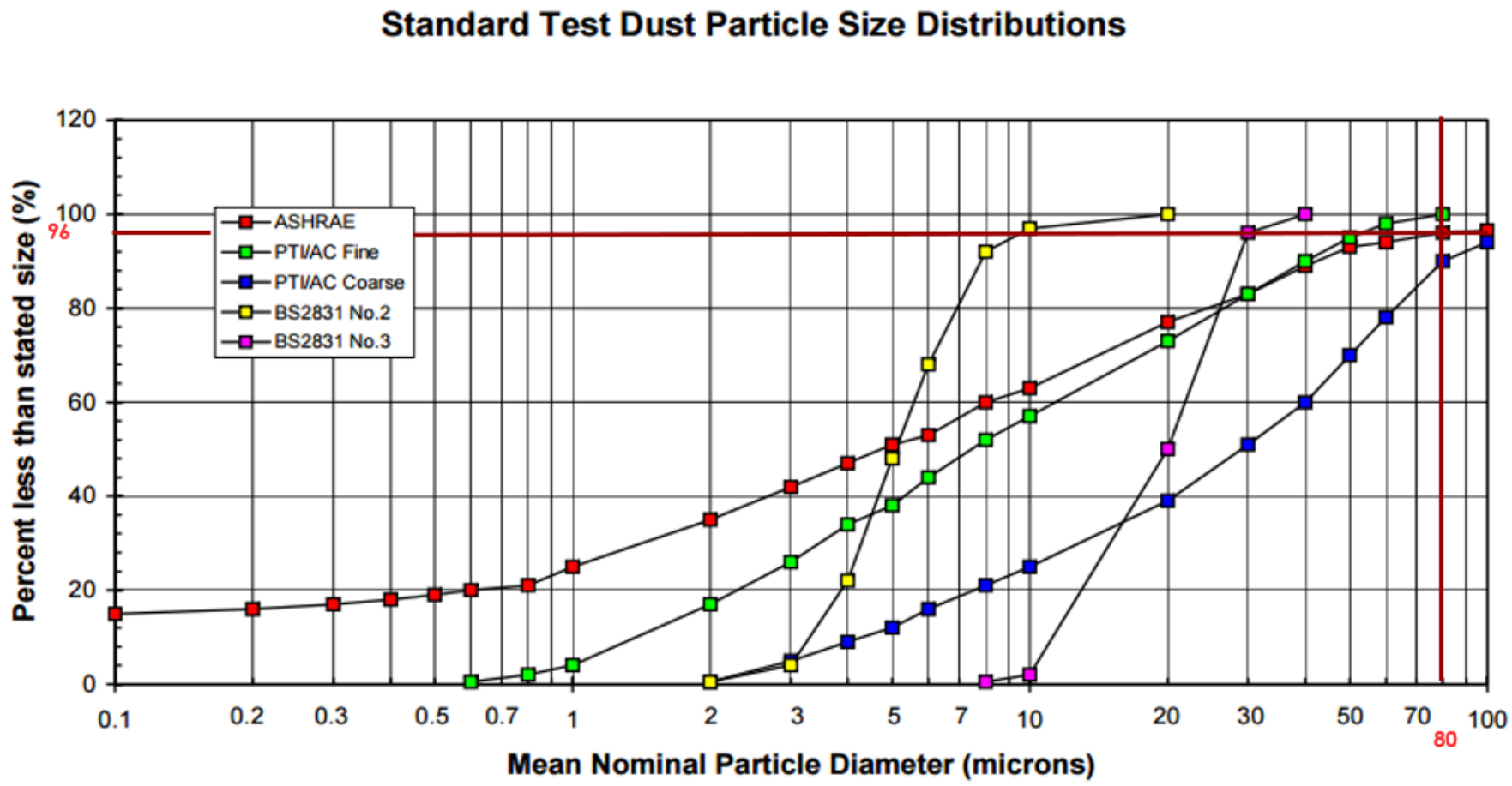
- ASHRAE Standard Method 52.1-1992 (modified using Crushed Quartz dust medium)
- EN 13181:2001 (10-2001) Ventilation for buildings Terminals. Performance testing of louvers (76-700um)

New AMCA Sand Louver Test Standard

- HEVAC v/s AMCA Sand particle size distribution
- AMCA 511 Publication and Seal

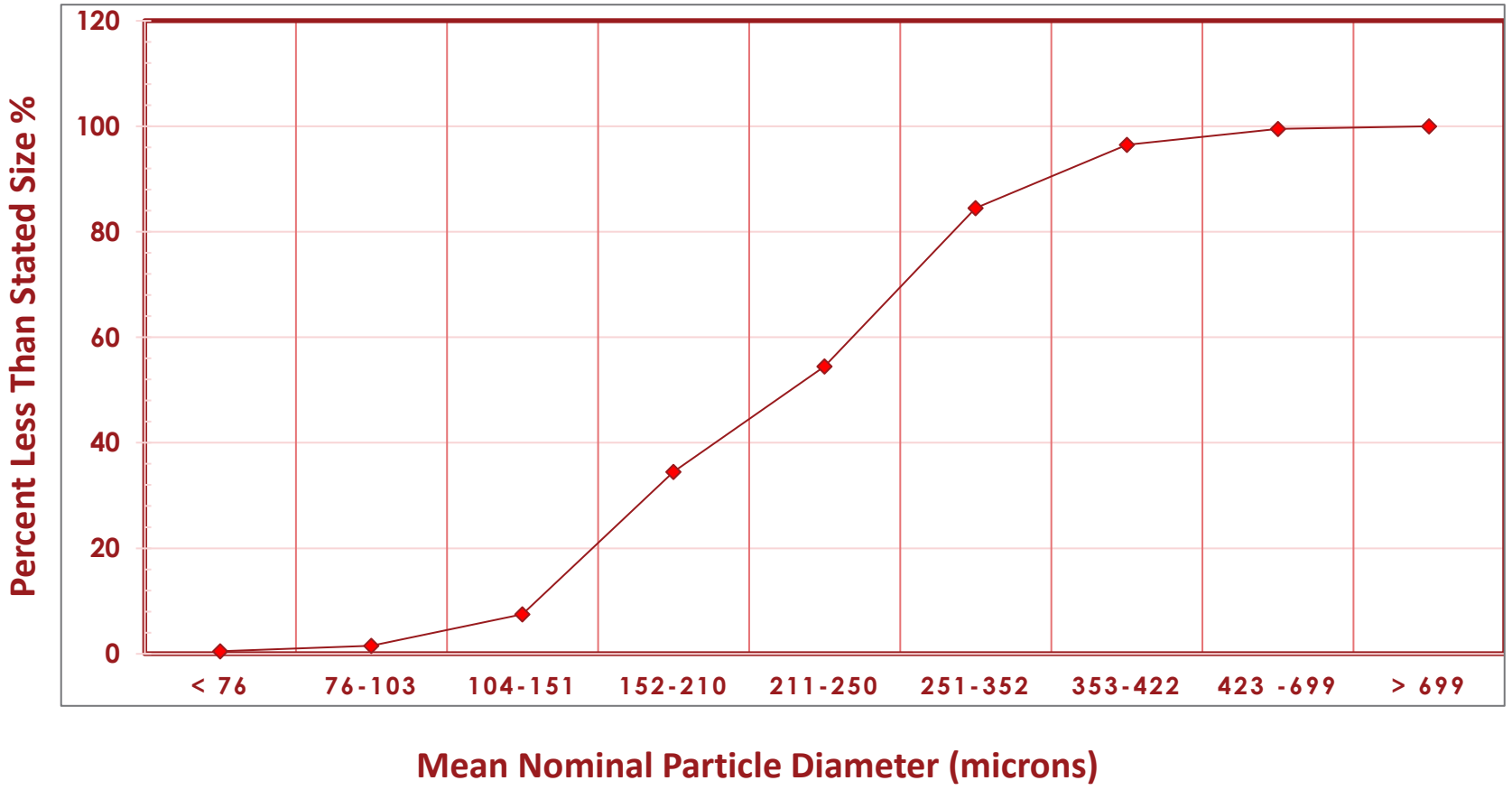
New AMCA Sand Louver Test Standard

HEVAC Guide to Filtration



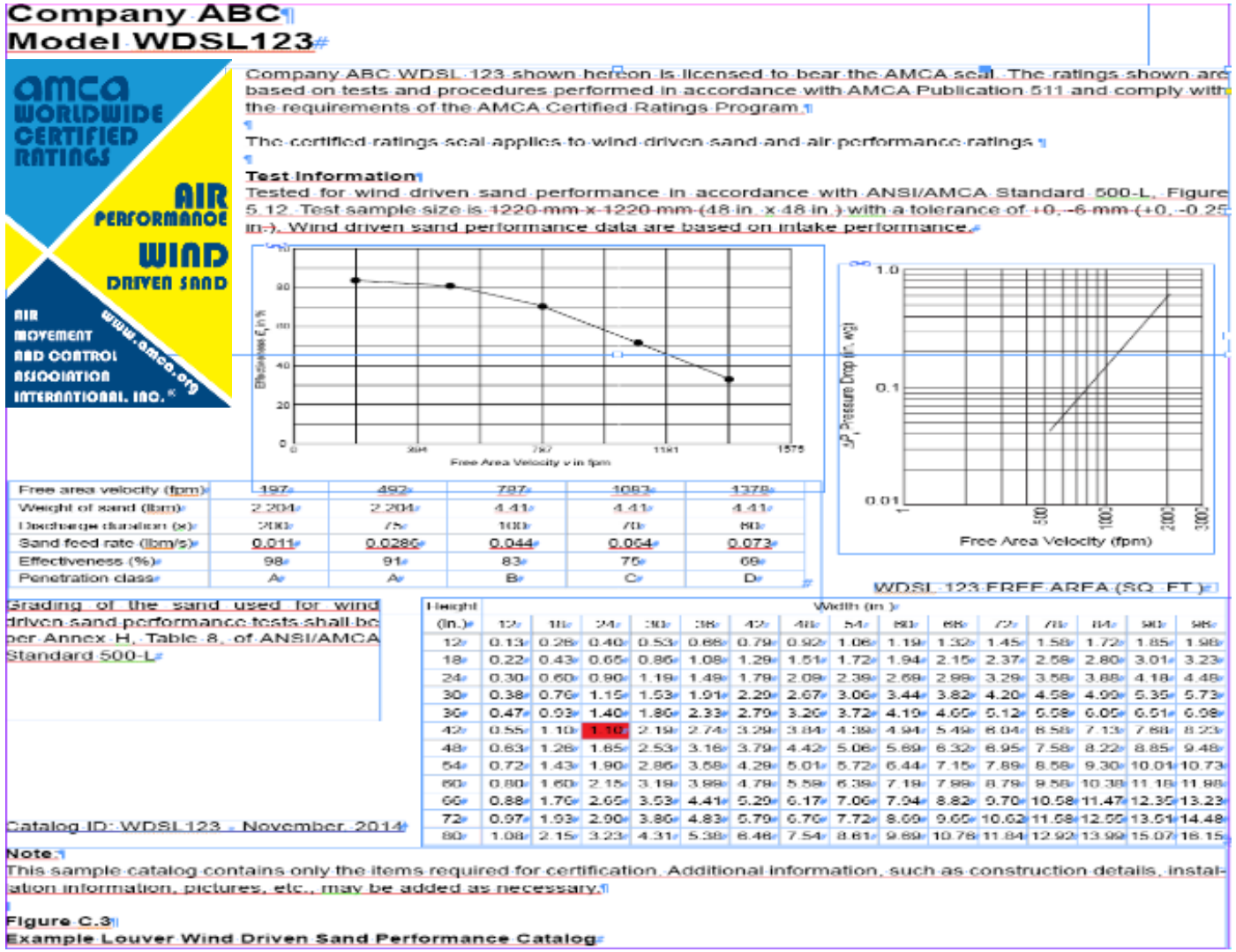
New AMCA Sand Louver Test Standard

AMCA's Standard Test Sand Particle Size Distribution (ISO 14688-1:2002)



New AMCA Sand Louver Test Standard

AMCA 511 Publication and Seal



Company ABC
Model WDSL123

amca WORLDWIDE CERTIFIED RATINGS — AIR PERFORMANCE — WIND DRIVEN SAND — AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. — www.amca.org

Company ABC WDSL 123 shown hereon is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program.

The certified ratings seal applies to wind driven sand and air performance ratings.

Test Information
Tested for wind driven sand performance in accordance with ANSI/AMCA Standard 500-L, Figure 5.12. Test sample size is 1220 mm x 1220 mm (48 in. x 48 in.) with a tolerance of +0, −6 mm (+0, −0.25 in.). Wind driven sand performance data are based on intake performance.

Free area velocity (fpm)	197	492	787	1083	1378
Weight of sand (lbm)	2.204	2.204	4.41	4.41	4.41
Discharge duration (s)	200	75	100	70	80
Sand feed rate (lbm/s)	0.011	0.0286	0.044	0.064	0.073
Effectiveness (%)	98	91	83	75	69
Penetration class	A	A	B	C	D

WDSL 123 FREE AREA (SQ. FT.)

Grading of the sand used for wind driven sand performance tests shall be per Annex H, Table 8, of ANSI/AMCA Standard 500-L.

Height (in.)	Width (in.)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
12	0.13	0.26	0.40	0.53	0.66	0.79	0.92	1.06	1.19	1.32	1.45	1.58	1.72	1.85	1.98
18	0.22	0.43	0.65	0.86	1.08	1.29	1.51	1.72	1.94	2.15	2.37	2.58	2.80	3.01	3.23
24	0.30	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.99	3.29	3.59	3.89	4.18	4.48
30	0.38	0.76	1.15	1.53	1.91	2.29	2.67	3.06	3.44	3.82	4.20	4.58	4.96	5.35	5.73
36	0.47	0.93	1.40	1.86	2.33	2.79	3.26	3.72	4.19	4.65	5.12	5.58	6.05	6.51	6.98
42	0.55	1.10	1.65	2.19	2.74	3.29	3.84	4.39	4.94	5.49	6.04	6.59	7.13	7.68	8.23
48	0.63	1.26	1.89	2.53	3.16	3.79	4.42	5.06	5.69	6.32	6.95	7.58	8.22	8.85	9.48
54	0.72	1.43	1.90	2.86	3.58	4.29	5.01	5.72	6.44	7.15	7.89	8.58	9.30	10.01	10.73
60	0.80	1.60	2.15	3.19	3.99	4.79	5.59	6.39	7.19	7.99	8.79	9.59	10.38	11.18	11.98
66	0.88	1.76	2.65	3.53	4.41	5.29	6.17	7.06	7.94	8.82	9.70	10.58	11.47	12.35	13.23
72	0.97	1.93	2.90	3.86	4.83	5.79	6.76	7.72	8.69	9.65	10.62	11.58	12.55	13.51	14.48
80	1.08	2.15	3.23	4.31	5.38	6.46	7.54	8.61	9.69	10.76	11.84	12.92	13.99	15.07	16.15

Catalog ID: WDSL123 - November 2014

Note:
This sample catalog contains only the items required for certification. Additional information, such as construction details, installation information, pictures, etc., may be added as necessary.

Figure C.3
Example Louver Wind Driven Sand Performance Catalog

Local Testing Facility

- 25 years in Service
- Located in Dubai, UAE
- Providing independent Testing, Inspection and Certification (TIC) services primarily for the building construction sector.

Specializations:

- Façade Consulting
- Curtain Wall Testing
- Fire Compliance

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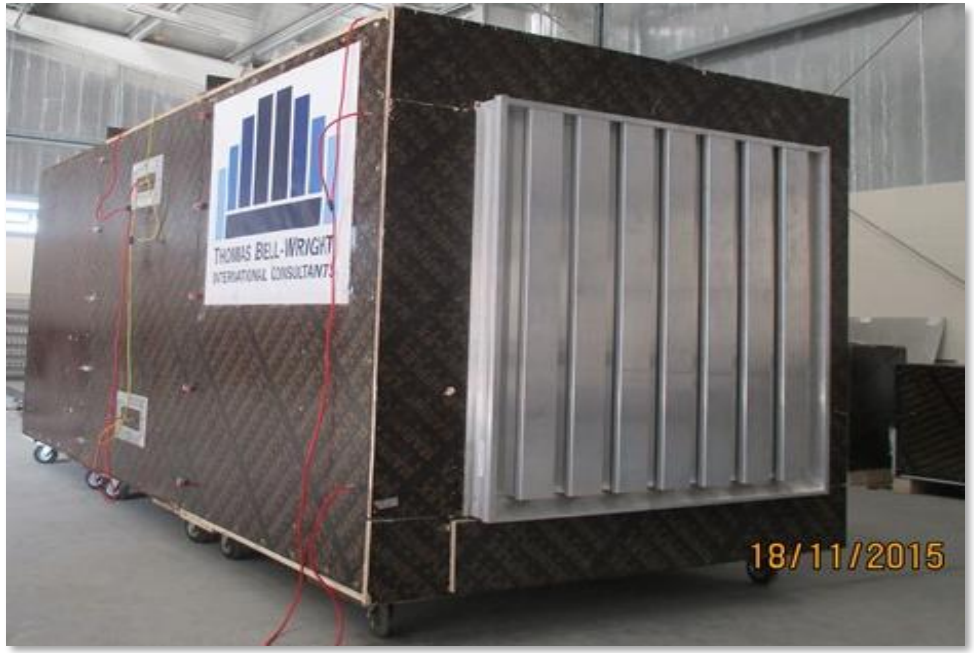
INTERNATIONAL CONSULTANTS



Local Testing Facility

Quality Systems

- ISO 17025, ISO 17065, ISO 17020, AC291

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INTERNATIONAL CONSULTANTS

Accreditations

- UKAS - UK
- ISO 17025, ISO 17065
- ENAS – UAE
- IAS - USA
- ISO 17020 Inspection AA-748
- SIA-211 Special Inspections Agency
- AMCA Sand Louver Testing

Responsibility Linkage

Consultant

Contractors

Expert Consultant

Residents and Tenants

Developer

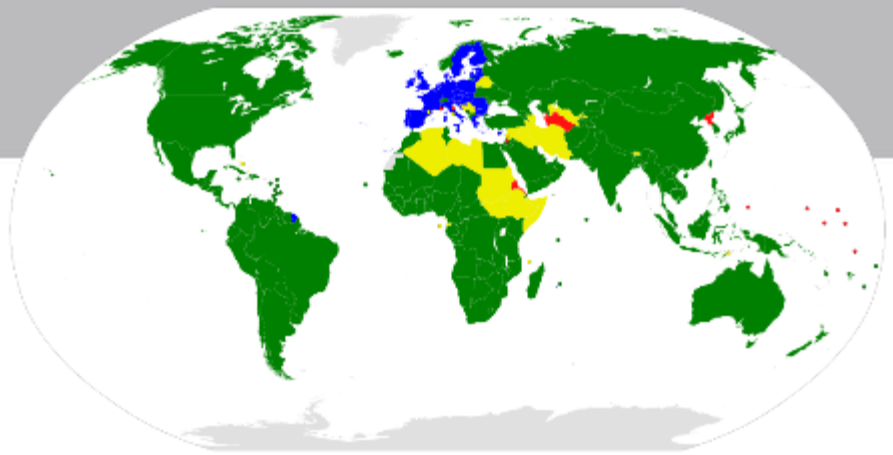
Owners

Manufacturer and Agents

Labs and Certification Bodies

Facility Management body

WORLD TRADE ORGANIZATION



99.98 % of world GDP
99.35 % of world population

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Assurance of Process of Seller

ISO 9001

ISO 17025

Assurance of process and Product Performance

ISO 9001

ISO 17025

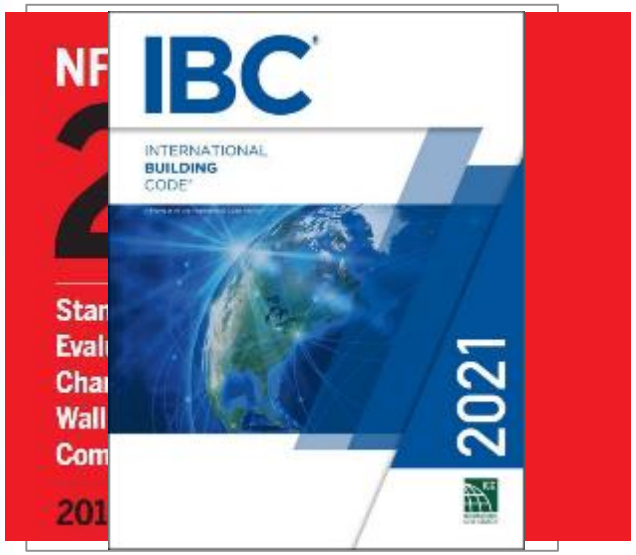
ISO 17065

Assurance of repeatability of performance and supply

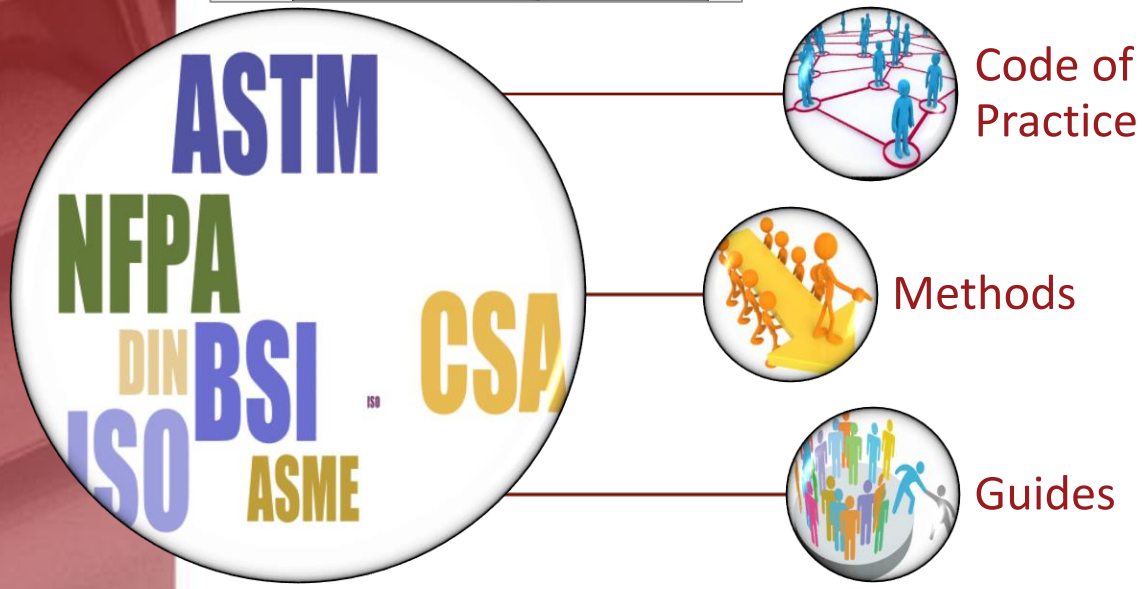
Product Registration

ISO 9001

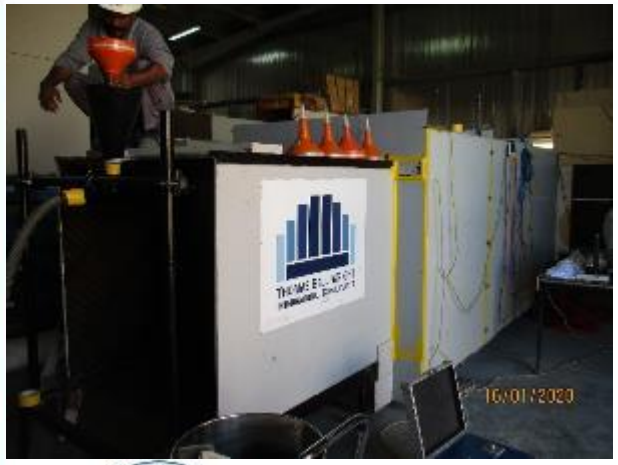
Way forward

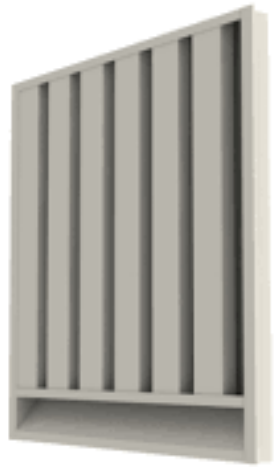


Types of Standards



- **Codes of practice** recommend sound good practice as currently undertaken by competent and conscientious practitioners.
- **Methods** are also highly prescriptive, setting out an agreed way of measuring, testing or specifying what is reliably repeatable in different circumstances and places
- **Guides** are published to give less prescriptive advice which reflects the current thinking and practice amongst experts in a particular subject





Assurance of Process of Seller

ISO 9001

ISO 17025

Assurance of process and Product Performance

ISO 9001

Reliance on Test reports

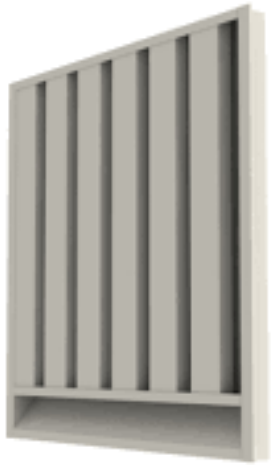
Link between test reports and supply?

When was the test done?

How many failure runs before a pass and why?

Validity of a test report?

Certified



Assurance of Process of Seller

ISO 9001

ISO 17025

Assurance of process and Product Performance

ISO 9001

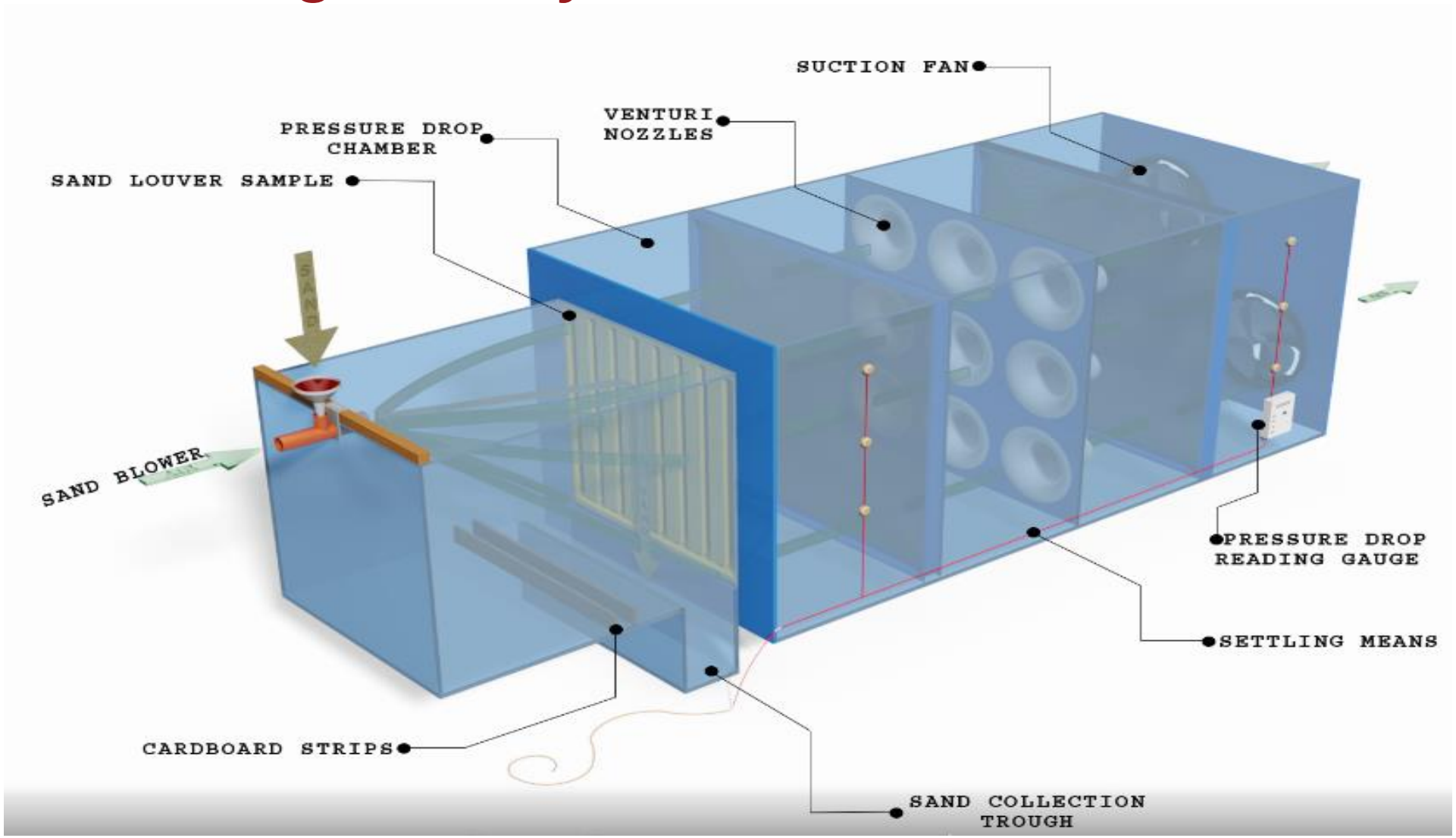
ISO 17025

ISO 17065

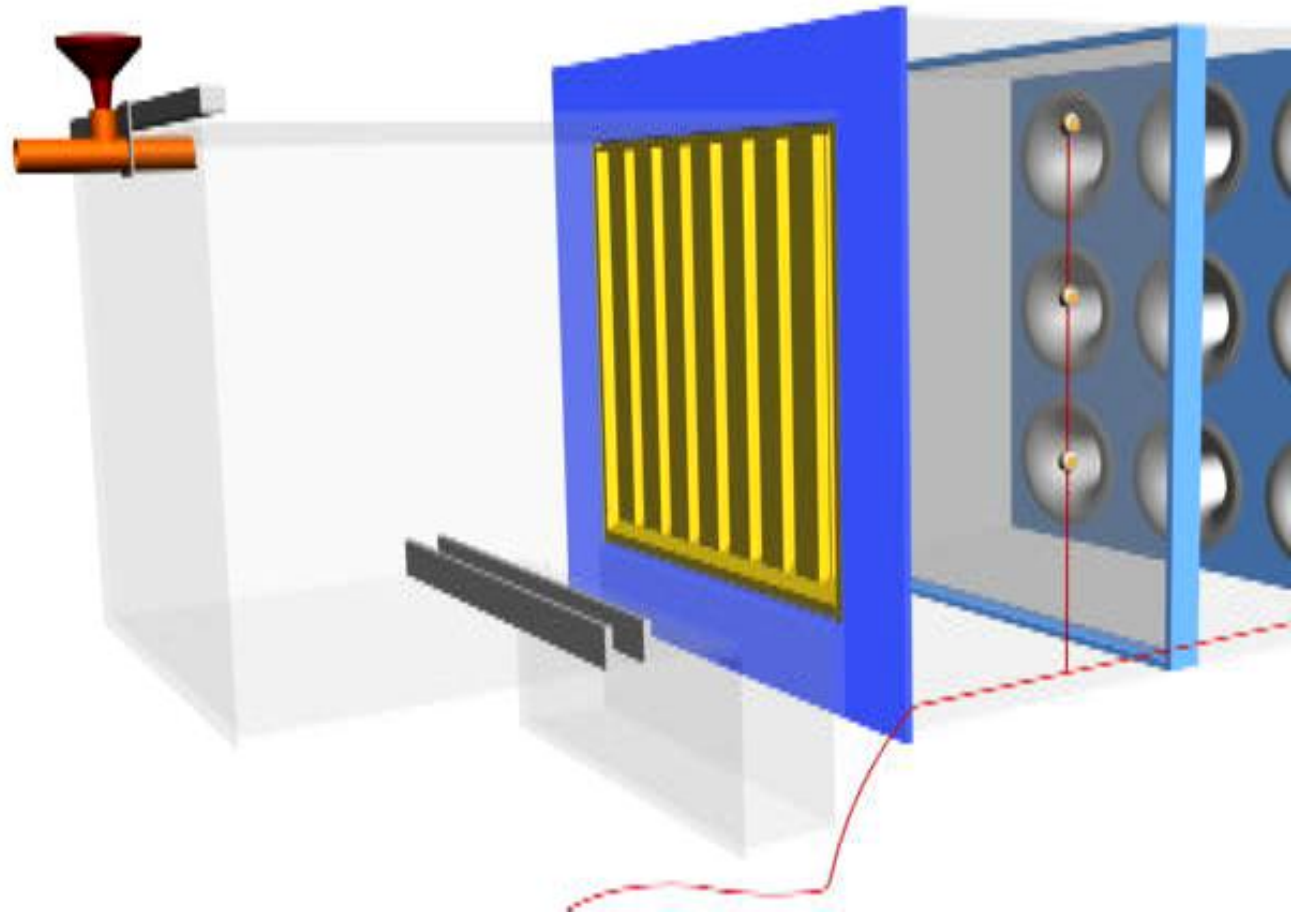
Assurance of repeatability of performance and supply

ISO 9001

Local Testing Facility – Sand Louver Test Chamber



Local Testing Facility – Test Chamber Simulation



Resources

- **AMCA International**: *www.amca.org*
- **ANSI/AMCA Standards**: *www.amca.org/store* (Available for purchase)

  > 500-L-12: Laboratory Methods of Testing Louvers for Rating

- **AMCA Publications**: *www.amca.org/store* (Available for purchase)

  > Publication 511-10 (R2016): Certified Ratings Program – Product Rating Manual for Air Control Devices

- **AMCA Sand Louver Certification video:** *www.amca.org/educate/#videos*

Thank you for your time!

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Questions?

NEXT PROGRAM

Join us for our next AMCA *insite*™ Webinar:

- Wednesday, March 24
- 12:00-1:00 p.m. CT
- ***TOPIC: Positive Pressure Ventilators (PPV) & AMCA 240 Updates***
- Presenters: Kyle Weinmeister, International Sales Director, AMCA Member Company

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